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	Filing Date		2003-07-31
	First Named Inventor	Gopalraja	
	Art Unit	1753	
	Examiner Name	Rodney Glenn McDonald	
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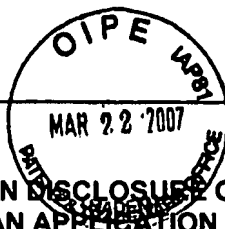
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/RM/	US-2005-0255691 pub. 11-17-2005 (atty dkt 07094C)					
	Apblett, C., et al. "Silicon nitride growth in a high-density plasma system," Solid State Technology, Nov. 1995, pp 73 - 80.					
	Bader, H.P., et al. "Planarization by radio-frequency bias sputtering of aluminum as studied experimentally and by computer simulation," J. Vac. Sci. Technol. A., Nov/Dec 1985, pp 2167 - 2171.					
	Cheng, P., et al. "Directional deposition of Cu into semiconductor trench structures using ionized magnetron sputtering," J. Vac Sci. Technol. B., 13(2), Mar/Apr 1995, pp 203 - 208.					
	Getty, Ward D. "Size-scalable, 2.45-Ghz electron cyclotron resonance plasma source using permanent magnets and waveguide coupling," J. Vac Sci. Technol. B 12(1), Jan/Feb 1994, pp 408 - 415.					
	Gorbatkin, S.M., et al. "Cu metallization using a permanent magnet electron cyclotron resonance microwave plasma/sputtering hybrid system," J. Vac. Sci. Technol. B, Vol. 14, No. 3, May/Jun 1996, pp 1853 - 1859.					
	Hamaguchi, S., et al. "Simulations of trench-filling profiles under ionized magnetron sputter metal deposition," J. Vac. Sci. Technol. B, Vol. 13, No. 2, Mar/Apr 1995, pp 183 - 191.					
	Holber, W.M., et al. "Copper deposition by electron cyclotron resonance plasma," J. Vac. Sci. Technol. A 11(6), Nov/Dec 1993, pp 2903 - 2909.					
	Homma, Y., et al. "Planar deposition of aluminum by RF/DC sputtering with RF bias," J. Electrochem. Soc. Vol. 132, No. 6, June 1985; pp 1466 - 1472.					
↓	Ivanov, I., et al. "Electron energy distribution function in a DC magnetron sputtering discharge," Vacuum, Vol. 43, No. 8, 1992, pp 837-84.					
/RM/	Kidd, P. "A magnetically confined and electron cyclotron resonance heated plasma machine for coating and ion surface modification use," J. Vac. Sci. Technol. A, Vol. 9, No. 3, May/Jun 1991, pp 466 - 473					

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/RM/	Kitamoto, Y., et al. "Compact sputtering apparatus for depositing Co-Cr alloy thin films in magnetic disks," Proc. Of the 4 th ISSP (Kanazawa, 1997), pp 518 - 522.
	Klawuhn, E., et al. "Ionized physical-vapor deposition using a hollow-cathode magnetron source for advanced metallization," J. Vac. Sci. Technol. A 18(\$), Jul/Aug 2000, pp 1546 - 1549.
	Kochel, L.J. "Pressure control of RF bias for sputtering," Rev. Sci. Instrum., Vol. 47, No. 12, Dec. 1976, pp 1556 - 1557.
	Koenig, H., et al. "RF sputtering system with variable substrate bias," IBM Techn. Discl. Bulletin Vol. 13, No. 2 (July 1970), pp 323 - 324.
	Kotani, H., et al. "Sputter-etching planarization for multilevel metallization," J. Electrochem. Soc.: Solid-State Science and Technology, Vol. 130, No. 3., March 1983, pp 645 - 648.
	Matsuo, S. "Reactive ion-beam etching and plasma deposition techniques using electron cyclotron resonance plasmas," Academic Press, Inc., 1983, pp 76 - 117.
	Matsuoka, M., et al. "Dense plasma production and film deposition by new high-rate sputtering using an electric mirror," J. Vac. Sci. Technol. A, Vol. 7, No. 4, Jul/Aug 1989, pp 2652 - 2657.
	Musil, J., et al., "Unbalanced magnetrons and new sputtering systems with enhanced plasma ionization," J. Vac. Sci. Technol. A, Vol. 9 No. 3, May/Jun 1991, pp 1171 - 1177.
	Nender, C., et al. "High bias sputtering for large-area selective deposition," Thin Solid Films 228 (1993) May 15, Nos.1-2, pp 87 - 90.
	Park, I.S., et al. "A novel Al-reflow process using surface modification by the ECR plasma treatment and its application to the 256Mbit DRAM," IEEE 1994, pp 109 - 112.
	Rosnagel, S.M. "Collimated magnetron sputter deposition with grazing angle ion bombardment," J. Vac. Sci. Technol. A 13(1), Jan/Feb 1995, pp 156 - 158.
	Samukawa, S., "Wave propagation and plasma uniformity in an electron cyclotron resonance plasma," J. Vac. Sci. Technol. A 11(5), Sep/Oct 1993, pp 2572 - 2576.
	Skelly, D. W., et al. "Significant improvement in step coverage using bias sputtered aluminum," J. Vac. Sci. Technol. A 4(3), May/Jun 1986, pp 457 - 460.
	Suzuki, K., et al. "Microwave plasma etching," unknown pub., Vol. 34, No. 10, 1984, pp 953-957.
	Suzuki, K., et al. "Microwave plasma etching," Japanese J. Applied Physics, Vol. 16, No. 11, Nov 1977, pp 1979-1984.
	Wada, J., et al. "Cu dual damascene process fo 0.13µm technology generation using self ion sputtering (SIS) with ion reflector," IEEE 2000, pp 108 - 110.
	Yamashita, M. "Fundamental characteristics of built-in high-frequency coil-type sputtering apparatus," J. Vac. Sci. Technol. A, Vol. 7, No. 2, Mar/Apr 1989, pp 151 - 158.
	Yasui, T., et al. "Electron cyclotron resonance plasma generation using a planar ring-cusp magnetic field and a reentrant coaxial cavity," J. Vac. Sci. Technol. A 13(4), Jul/Aug 1995, pp 2105 - 2109.
	Yamazato, M., et al. "Preparation of TiN thin films by facing targets magnetron sputtering," Proc. Of the 4 th ISSP (Kanazawa, 1997), pp 634 - 638.
	Anon. "Endpoint detection method for ion etching of material having a titanium nitride underlayer," Research Disclosure, Feb 1991, No. 322, 1 pg.
	Novellus Systems, Inc. "Damascus: 12 Steps of Damascus," webpages printed 1998, 14 pp.
	"SypherLine by MTi," advertisement, Semiconductor International, Nov. 1985; 4 pp.
/RM/	"Applications Note, MTi," internal and/or marketing document, Vol. 1, No.1, April 1986, 4 pp.
/Rodney McDonald/ 04/10/2007	

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